

Work Order ID 86949

86949

Page 1

July-09-12 2:58:03 PM

Item ID: D3220-041 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Doubler Assembly
 Start Date: 7/09/12 Start Qty: 4.00 ***4*** Cust Item ID:
 Required Date: 8/17/12 Req'd Qty: 4.00 ***4*** Customer:
 Reference:

Approvals: Process Plan: MLJ Date: 12/07/10 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr					(4)			
D3220	B								
100	FLOW WATER JET	0.00							
100									
Waterjet	Memo	0.00							
FLOW CNC Waterjet	1-Cut D3220-1 as per Dwg D3220 Dwg Rev: <u>B</u>								
<u>2009.050</u>	Prog Rev: <u>B</u>								
	2-Deburr if necessary								
110	QC2- Inspect parts off machine FAI/FAIB	0.00							
110									
QC	Memo	0.00							
Quality Control									
120	QC8- Inspect parts - second check	0.00							
120									
QC	Memo	0.00							
Quality Control									

B12-7-24

B12-7-24

SmB
12-7-24
1 DAS
98
2-00
17/10/25

4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

July-09-12 2:58:03 PM

Item ID: D3220-041

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Doubler Assembly

Start Date: 7/09/12 **Start Qty:** 4.00 ***4***

Cust Item ID:

Required Date: 8/17/12 **Req'd Qty:** 4.00 ***A***

Customer:

Reference:

Run Start *NR1*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130

130

Small Fab

Small Fab

Small Fab

Memo

1-Debutt

2-C'sink D3220-1 as per Dwg D3220

0.00

0.00

140

140

OC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

0.00

0.00

150

150

HandFinish

Hand Finishing

Chemical Conversion Coat per QSI005 4.1

Memo

0.00

0.00

W/O:		WORK ORDER CHANGES					
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July-09-12 2:58:03 PM

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 7/09/12 **Start Qty:** 4.00 ***4***

Cust Item ID:

Required Date: 8/17/12 **Req'd Qty:** 4.00 *** / ***

Customer:

Reference:

Run Start *NR1*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop *NR2*

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

**Insp.
Stamp**

0.00

160

QC

Memo

0.00

Quality Control

170

0.00

170

Small Fab

Small Fab

Memo

0.00

Small Fab

Assemble D3220-041 doubler as per Dwg D3220

186

QC5- Inspect part completeness to step on W/O

0.00

180

QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
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Page 4

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190 *190* Packaging Packaging	Identify as per dwg & Stock Location <u>177</u> Memo	0.00 0.00				(40)			12/7/12 JF
200 *200* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00							12/7/30 JF MF 12-07-20

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

July-09-12 2:58:03 PM

Page 1

Work Order ID: 86949
Parent Item: D3220-041
Parent Item Name: Doubler Assembly

Start Date: 7/09/12
Start Qty: 4.00
Required Date: 8/17/12
Required Qty: 4.00

Comments: IPP Rev:A New Issue 05-11-06 JLM
IPP: B 06.11.15 waterjet EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty or Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M2024T3S.056 2024-T3 .050 sheet		Purchased	No			100	sf	253.5000	0.6926	2.9162104	3.		

B12-9-24

Location	Loc Qty	Loc Code
MAT022	253.5	
117684	22.8	
121216	89.2	
121889	141.5	

MS20426AD3-3 Rivet		Purchased	No			170	Each	2,885.0000	8	32			
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Location	Loc Qty	Loc Code
ST316	2885	
119109	537	
121011	1931	
19099	417	

MS21059L4 Nutplate		Purchased	No			170	Each	48.0000	4	16			
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Location	Loc Qty	Loc Code
ST301	8	
117887	3	
119623	5	
ST302	40	
121060	40	

~~1716~~
11/20/11
W

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	86949
Description: Doubler		Part Number:	D3220-1
Inspection Dwg: D3220	Rev: B	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
5.50	+/-0.030	5.505	✓		V IBZ	
14.25	+/-0.030	14.25	✓		T IBZ	
R0.50	+/-0.030	.50	✓		R.G.	
7.00	+/-0.030	7.007	✓		V	
7.000	+/-0.005	7.008	✓		V	
1.50	+/-0.030	1.503	✓		V	
1.000	+/-0.005	1.000	✓		V	
0.500	+/-0.005	.500	✓		V	
1.000	+/-0.005	.999	✓		V	
0.316	+0.005/-0.000	.316	✓		V	
0.098	+0.005/-0.000	.098	✓		V	
0.050 thick	+/-0.005	.048	✓		V	
Grain Direction	N/A		✓			

Measured by: IB	Audited by: SMB	Prototype Approval:	N/A
Date: 12-7-24	Date: 12-7-24	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	04.02.27	New Issue P/O D3220-041	KJ/RF	
B	10.02.02	Dwg Rev updated	KJ	

Dart Aerospace Ltd

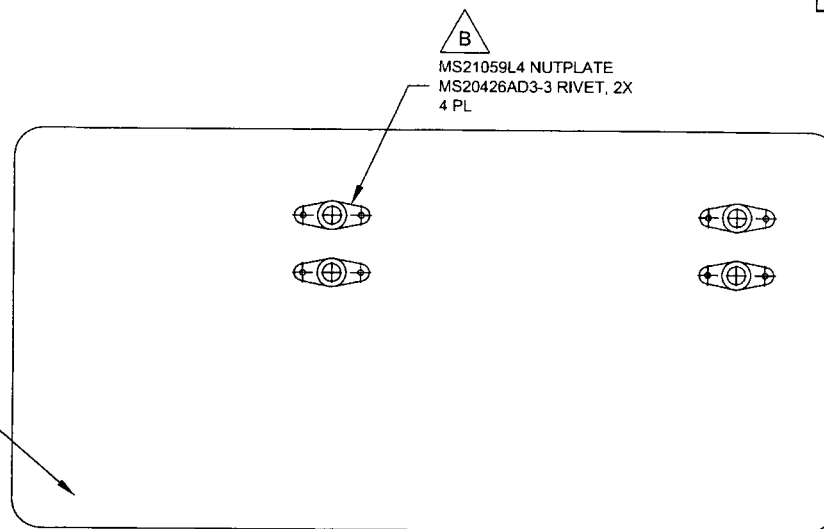
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
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Item	Qty -041	Qty -042	Part Number	Description
1	X		D3220-041	DOUBLER ASSEMBLY
2		X	D3220-042	DOUBLER ASSEMBLY
3	1		D3220-1	DOUBLER
4		1	D3220-2	DOUBLER
5	4	4	MS21059L4	NUTPLATE
6	8	8	MS20426AD3-3	RIVET



D3220-1/2 DOUBLER

D3220-041 DOUBLER ASSEMBLY (SHOWN WITH D3220-1 DOUBLER)
D3220-042 (OPPOSITE)

NOTES:




- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3220-04X" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: D3220-041 = 0.53 lbs
D3220-042 = 0.53 lbs

SHOP COPY
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UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 86949 MLJ

12/07/10

RELEASED
2009-09-09

B	DRAWING UPDATED TO CURRENT STANDARDS. Ø0.316 WAS Ø0.323 (ZN C8-2, B4-3); MS20426AD3-3 WAS MS20426AD3-4 (ZN D4-1); CORRECT TYPO NOTE 1 (ZN A8-2, A8-3); REF PAR 09-025		RF	09.07.08
A	NEW ISSUE		CP	03.10.16
REV	DESCRIPTION		BY	DATE
DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
DRAWN	RF			
CHECKED		DRAWING NO.	REV.	
MFG. APPR.		D3220	SHEET 1 OF 4	
APPROVED		TITLE	SCALE	
DE APPR.		DOUBLER	NT	
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

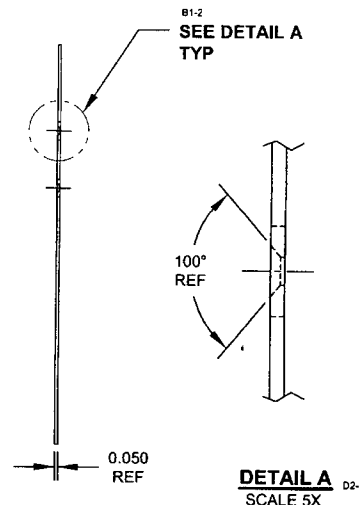
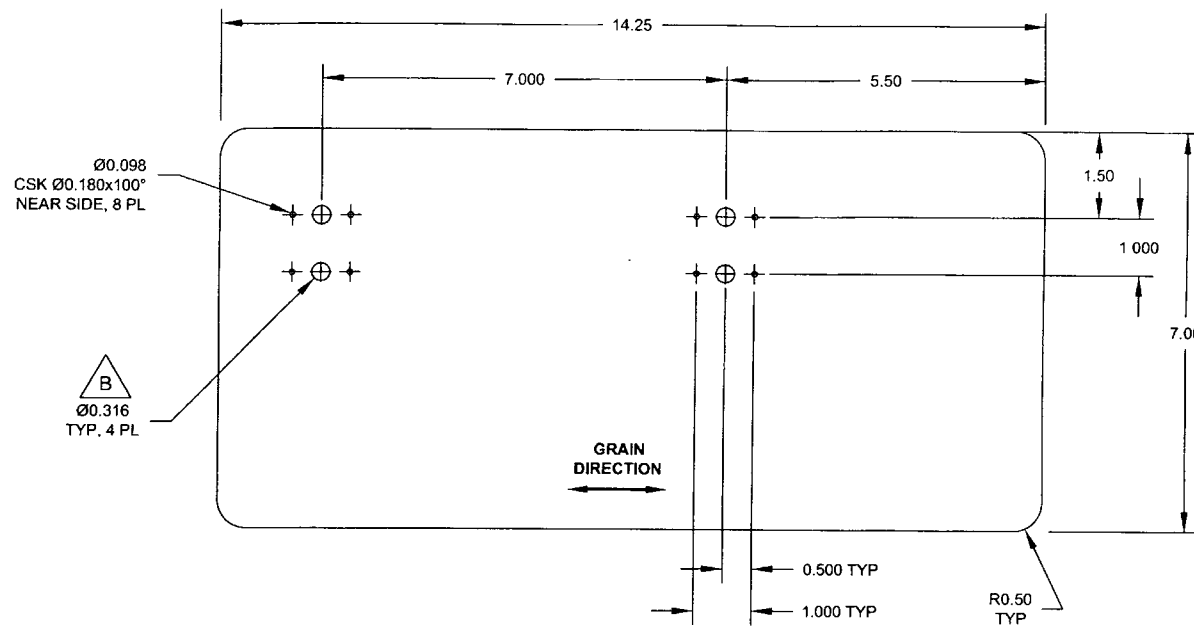
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

86949



D3220-1 DOUBLER

RELEASED
2009-09-08



- NOTES:**
- 1) MATERIAL: 2024-T3 ALUMINUM SHEET, 0.050 THICK
REF DART SPEC. M2024T3S.050
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3220-1" USING REMOVABLE TAG
 - 7) WEIGHT: 0.50 lbs

DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		D3220	SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		DOUBLER	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

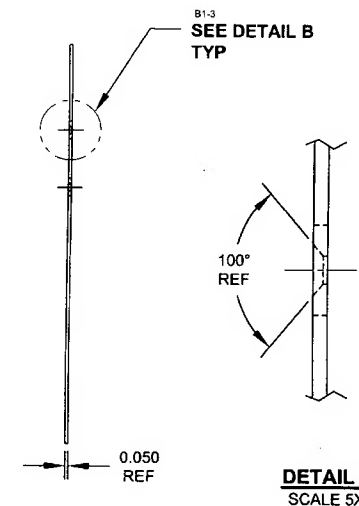
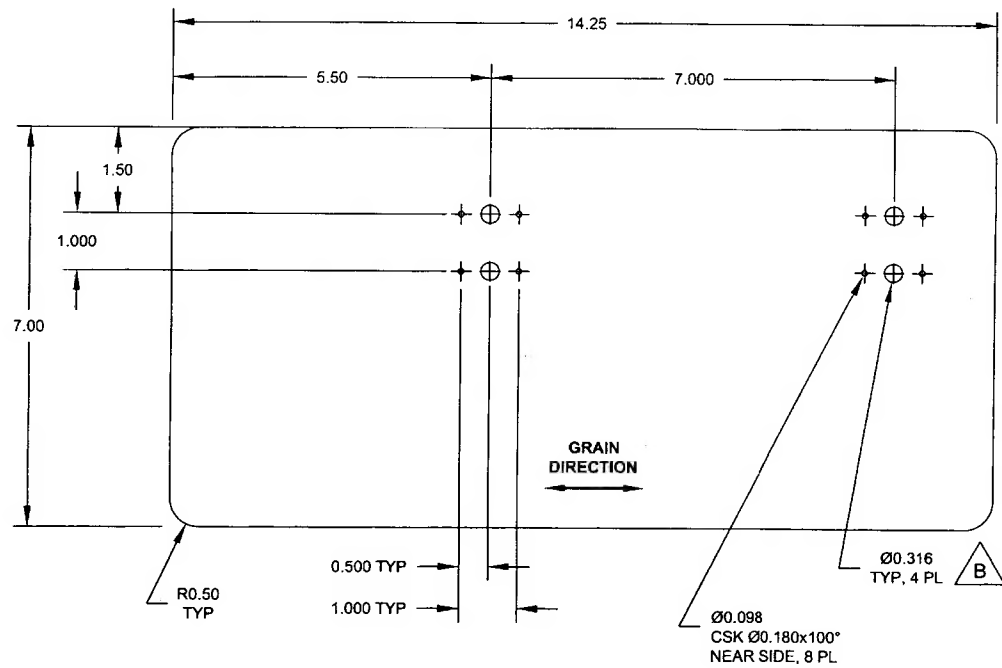
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

86949



D3220-2 DOUBLER

RELEASED
2009-09-09



- NOTES:**
- 1) MATERIAL: 2024-T3 ALUMINUM SHEET, 0.050 THICK
REF DART SPEC. M2024T3S.050
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3220-2" USING REMOVABLE TAG
 - 7) WEIGHT: 0.50 lbs

DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		D3220	SHEET 3 OF 4
APPROVED		TITLE	SCALE
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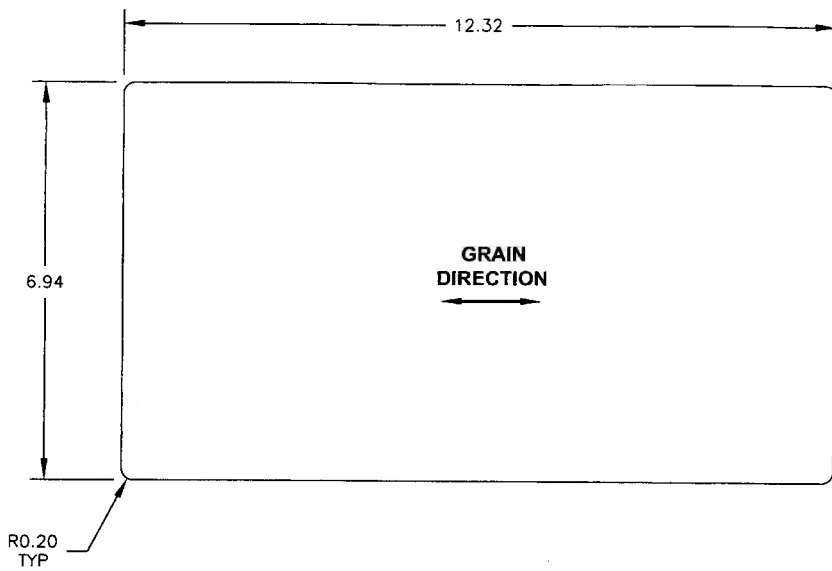
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NOTE: Date & initial all entries

86549



D3220-3 DOUBLER

RELEASED
2009-09-09

NOTES:

- 1) MATERIAL: 2024-T3 ALUMINUM SHEET, 0.050 THICK
REF DART SPEC. M2024T3S.050
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3220-3" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.43 lbs

DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D3220	SHEET 4 OF 4
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	DOUBLER	NTS
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